

***PROBOSCIDOTYLUS NIGROSQUAMIS* (MALDONADO)  
(HETEROPTERA: MIRIDAE: ORTHOTYLINAE): NEW COMBINATION AND  
FIRST RECORD FOR THE UNITED STATES**

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*Abstract.*—*Parthenicus nigrosquamis* Maldonado, described and previously known only from Puerto Rico, is reported for the first time in the United States from Key West, Florida. Based on head morphology, vestiture, and male genital structures, this species is removed from *Parthenicus* Reuter and transferred to the monotypic genus *Proboscidotylus* Henry (**n. comb.**), previously known only from Mexico. The type species of *Proboscidotylus*, *P. carvalhoi* Henry, and *P. nigrosquamis* are redescribed and their relationships are discussed. Scanning electron micrographs of selected structures, dorsal and lateral photographs, and illustrations of male genitalia for both species are provided to help facilitate recognition.

*Key Words:* Insecta, Heteroptera, Miridae, Orthotylinae, new combination, descriptions, distribution

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While studying material housed in the Florida State Collection of Arthropods in Gainesville, I discovered four specimens of *Parthenicus nigrosquamis* Maldonado from Key West, Florida, that represent a new record for the United States. Maldonado (1969), in describing *P. nigrosquamis* from Puerto Rico based on seven specimens, indicated that this species might not be congeneric with other species of *Parthenicus*, but refrained from erecting a new genus. My study of external characters and male genitalia indicates that *P. nigrosquamis* is congeneric with *Proboscidotylus carvalhoi* Henry described from Veracruz, Mexico (Henry 1995).

In this paper, I transfer *Parthenicus nigrosquamis* to the genus *Proboscidotylus*, redescribe *P. carvalhoi* and *P. nigrosquamis*, and provide for both species scanning electron micrographs of selected structures,

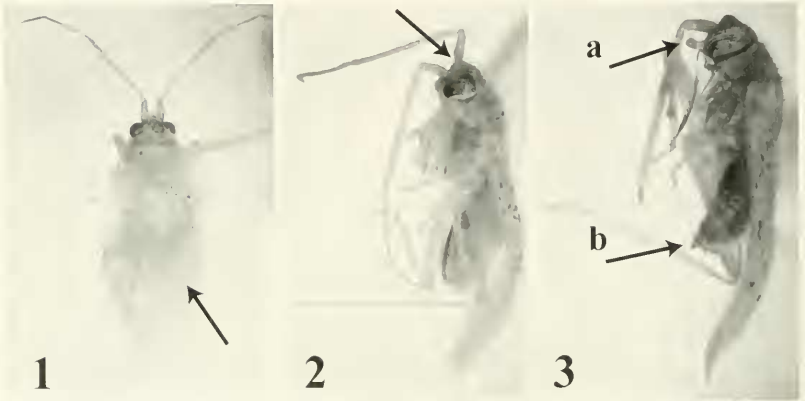
dorsal and lateral photographs, and illustrations of male genitalia. Also given are an identification key, a discussion of relationships, and new records of *P. nigrosquamis* from Puerto Rico and the United States.

Acronyms for collections cited in this paper are as follows: FSCA (Florida State Collection of Arthropods, Florida Department of Agriculture, Gainesville); UNAM (Instituto de Biología, Universidad Nacional Autónoma de México, Mexico, DF); USNM ([United States] National Museum of Natural History, Smithsonian Institution, Washington, DC).

*Proboscidotylus* Henry

*Proboscidotylus* Henry 1995: 340. Type species: *Proboscidotylus carvalhoi* Henry 1995. Original designation.

Diagnosis.—Members of this genus may be separated from all other Orthotylinae by



Figs. 1-3. *Proboscidoitylus carvalhoi*. 1, Dorsal aspect, ♀; arrow indicating cuneal patch. 2, Lateral aspect, ♀; arrow indicating swollen frons. 3, Lateral aspect, ♂; arrow a indicating extended tylus; arrow b indicating setigerous tubercle on genital capsule.

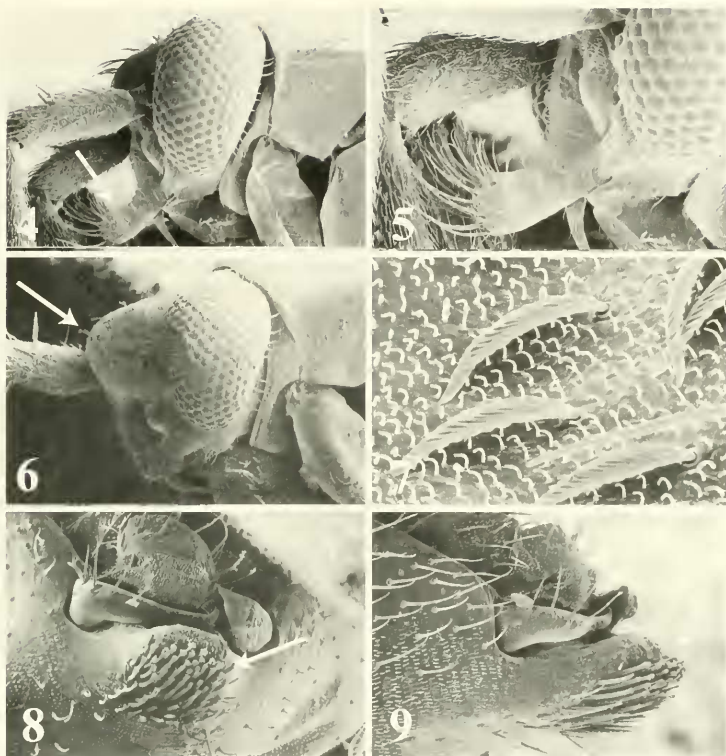
the strongly swollen frons extending well in front of the eyes in both sexes (Figs. 4, 6, 12), particularly in females; prominent tylus, sometimes extended into an elongate tubercle (Figs. 3-5); relatively stout antennal segment I; uniformly cylindrical antennal segment II, sometimes slightly more thickened basally in males; erect simple setae on the dorsum, intermixed with black scalelike setae on the pronotum and hemelytra, with a small, more dense, patch of black scalelike setae on each paracuneus (Figs. 1, 10); and a cluster of stout, apically swollen, bristlelike and, possibly, glandular setae on the ventral surface of the genital capsule (Figs. 8-9, 15-17). Male genitalia: Vesica simple, secondary gonopore typical with indistinct horseshoe-shaped opening, bearing one slender or clavate spiculum (Figs. 19, 22); left paramere L-shaped (Figs. 18, 21); right paramere simple, elongate to elongate oval (Figs. 20, 23).

Discussion.—The relationship of *Proboscidoitylus* to other orthotylini is not fully known. Henry (1995) indicated that it belonged in the nominate tribe Orthotylini, somewhere near the *Zanchius* group as defined by Schuh (1974), and noted that only

a few other orthotyline genera bear black, scalelike, dorsal setae, including *Brooksetta* Kelton, *Inacora* Reuter, *Inacorella* Knight, *Macrotyloides* Van Duzee, and *Parthenicus* Reuter. Synapomorphies distinguishing *Proboscidoitylus* from these and other orthotylini possessing black, scalelike, dorsal setae are the strongly swollen frons, the uniformly cylindrical second, and the cluster setae on the ventral surface of the male genital capsule.

#### KEY TO THE SPECIES OF *PROBOSCIDOITYLUS*

1. Length of male 2.68-2.84 mm, female 2.64-3.04 mm; tylus of male extended into an elongate, apically setigerous tubercle (Figs. 3-5); antennal segment II of male and female much longer than the basal width of the pronotum, at least by the dorsal width of an eye; Mexico (Veracruz) ..... *carvalhoi* Henry
2. Length of male 2.35-2.55 mm, female 2.40-2.65 mm; tylus of male not extended into an elongate tubercle (Figs. 11-12); antennal segment II of male and female only slightly longer than the basal width of the pronotum, much less than by the dorsal width of an eye; Puerto Rico and United States (Florida) .....  
..... *nigrosquamis* (Maldonado)



Figs. 4–9. Scanning electron micrographs of *Proboscidotylus carvalhoi* (after Henry 1995). 4, Head, lateral aspect of ♂ (150×); arrow indicating extended tylus. 5, Extended tubercle on tylus of ♂ (260×). 6, Head, lateral aspect of ♀ (151×); arrow indicating swollen frons. 7, Scalelike setae on hemelytra (1,610×). 8, Genital capsule, caudal aspect (426×); arrow indicating setal cluster. 9, Genitalia capsule, lateral aspect (447×); arrow indicating setal cluster.

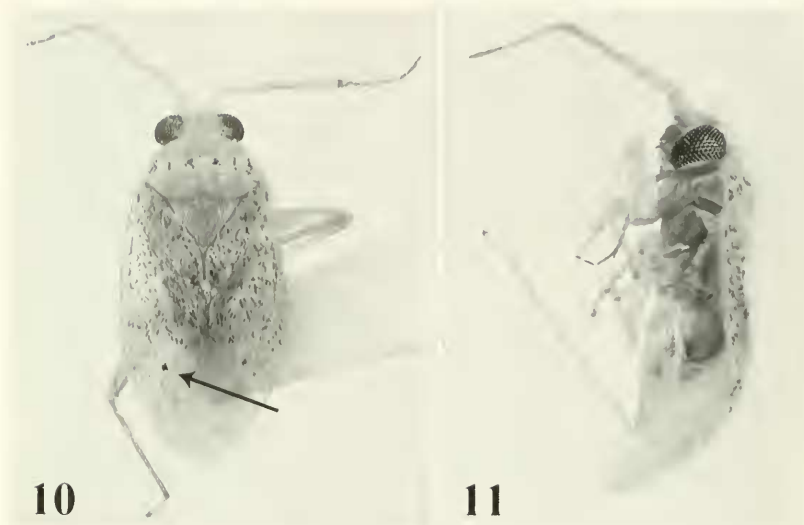
*Proboscidotylus carvalhoi* Henry  
(Figs. 1–9, 18–20)

*Proboscidotylus carvalhoi* Henry 1995: 344  
(n. sp.).

Diagnosis.—Separated from *P. nigrosquamis* by the larger size, more strongly swollen frons, elongate tubercle on the tylus found only in the male, and the proportionately longer second antennal segment.

Description (modified after Henry

1995).—Male (n = 4): Length 2.68–2.84 mm, width 1.20–1.26 mm (widest area across hemelytra). Overall coloration pale brownish yellow. Dorsum clothed with scattered erect, simple setae, intermixed with slender, black, scalelike setae (Fig. 7) on hemelytron and similar scattered scalelike setae on posterior half of pronotum (more dense transverse patches as in *P. nigrosquamis* possibly rubbed away); each paracuneus with a small, dense patch of



Figs. 10–11. *Proboscidotylus nigrosquamis* (♂). 10, Dorsal aspect; arrow indicating cuneal patch. 11, Lateral aspect.

black scalelike setae. *Head*: Width 0.64–0.66 mm, vertex 0.24–0.28 mm; frons strongly swollen (Fig. 4); tylus extended into an elongate, apically setigerous tubercle (Figs. 4–5), length 0.10 mm. *Rostrum*: Length 0.74–0.78 mm, extending nearly to bases of metacoxae. *Antenna*: Segment I, length 0.28–0.30 mm; II, 1.20–1.24 mm; III, 0.56–0.64 mm; IV, 0.34–0.40 mm. *Pronotum*: Length 0.28–0.30 mm, basal width 0.84–0.86 mm. *Genitalia*: Genital capsule (Figs. 8–9); left paramere (Fig. 18); slender vesical spiculum (Fig. 19); right paramere (Fig. 20).

*Female* (n = 8): Length 2.64–3.04 mm, width 1.24–1.28 mm. *Head*: Width 0.60–0.62 mm, vertex 0.28–0.30 mm. *Rostrum*: Length 0.80–0.86 mm. *Antenna*: Segment I, length 0.30–0.32 mm; II, 1.12–1.20 mm; III, 0.74–0.78 mm; IV, 0.40–0.46 mm. *Pronotum*: 0.28–0.32 mm, basal width 0.84–0.88 mm.

Similar to male in overall coloration and

pubescence, but differs by the broader form (Figs. 1–2), more strongly swollen frons (Fig. 6), and tylus lacking an elongate tubercle.

*Host*.—Unknown.

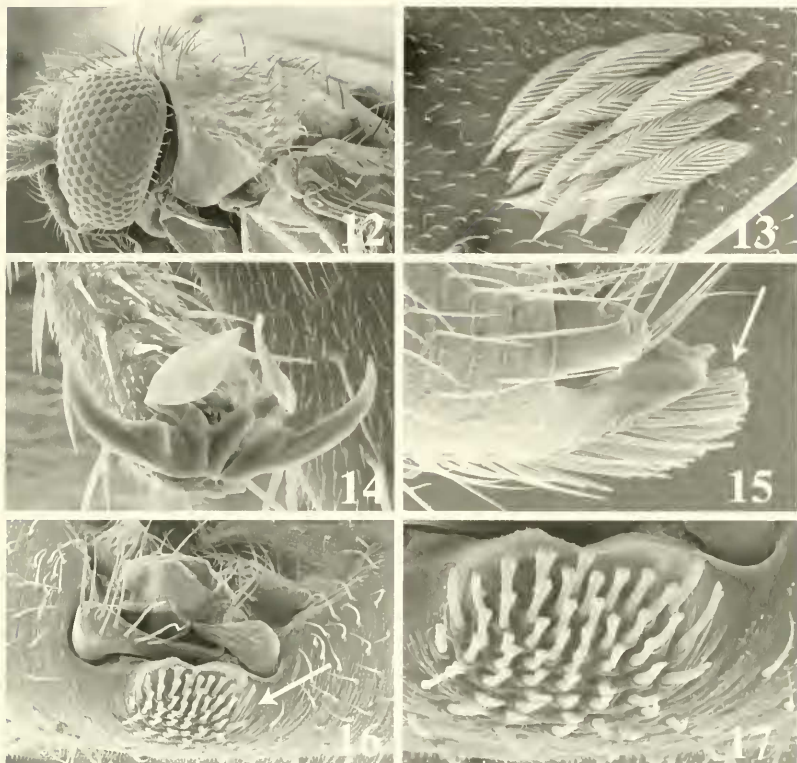
*Distribution*.—Known only from Veracruz, Mexico.

*Specimens examined*.—MEXICO: holotype ♂ and 4 ♂, 8 ♀ paratypes, Veracruz, UNAM Los Tuxtlas Estac. Biol., N. Catemaco, 16–19 Sept. 1989, E. Barrera, T. J. Henry, & I. M. Kerzhner, taken at light (1 ♂, 3 ♀ UNAM; holotype, 3 ♂, 5 ♀ USNM).

*Proboscidotylus nigrosquamis*  
(Maldonado), **new combination**  
(Figs. 10–17, 21–23)

*Parthenicus nigrosquamis* Maldonado 1969: 66 (n. sp.); Schuh 1995: 179 (cat.).

*Diagnosis*.—Separated from *P. carvalhoi* by the smaller size, less strongly swollen

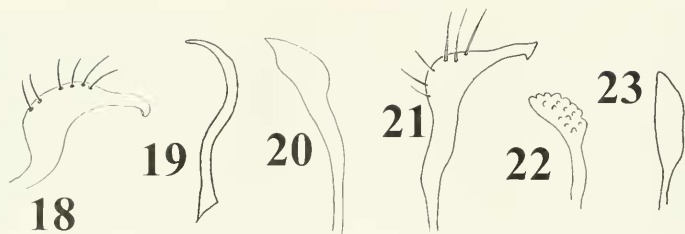


Figs. 12–17. Scanning electron micrographs of *Probosidotylus nigrosquamis* (3). 12, Head, lateral aspect (151 $\times$ ). 13, Patch of scalelike setae on cuneus (1,710 $\times$ ). 14, Claw (1,300 $\times$ ). 15, Genital capsule, lateral aspect (895 $\times$ ); arrow indicating setal cluster. 16, Genital capsule, caudal aspect (530 $\times$ ); arrow indicating setal cluster. 17, Highly magnified bristlelike setae on genital capsule (1,270 $\times$ ).

frons, absence of a tubercle on the tylus of the male, and the proportionately shorter antennal II that is only slightly longer than the width of the pronotum by a length much less than the dorsal width of an eye.

**Description.**—Male ( $n = 5$ ): Overall coloration uniformly green to yellowish green. Dorsum clothed with scattered erect, simple setae, intermixed with slender, black, scalelike setae (Figs. 10, 13) on hemelytron and posterior half of pronotum; black scalelike setae on pronotum thicker and clustered

into 5 or 6 more dense, transverse patches; each paracuneus with a dense patch of black scalelike setae. Length 2.35–2.55 mm, width 1.01–1.09 mm (widest area across hemelytra). **Head:** Width 0.57–0.59 mm, vertex 0.20–0.21 mm; frons swollen, tylus prominent (Fig. 12), but not extended into a long tubercle and without apical cluster of long setae. **Rostrum:** Length 0.74–0.78 mm, extending nearly to bases of metacoxae (extends past metacoxae to base of abdomen in curled or more teneral speci-



Figs. 18–23. Male genitalia of *Probosciodotylus* spp. 18–20, *P. carvalhoi* (after Henry 1995): 18, Left paramere. 19, Vesical spiculum. 20, Right paramere. 21–23, *P. nigrosquamis*: 21, Left paramere. 22, Vesical spiculum. 23, Right paramere.

mens). *Antenna*: Segment I, length 0.20–0.21 mm; II, 0.94–0.96 mm; III, 0.35–0.38 mm; IV, 0.22–0.29 mm. *Pronotum*: Length 0.27–0.29 mm, basal width 0.91–0.82 mm. *Legs*: Slender, concolorous with body; tibial spines pale, indistinct; claws slender, parempodia fleshy, typically convergent apically (Fig. 14). *Genitalia*: Genital capsule (Figs. 15–17); left paramere (Fig. 21); apically clavate vesical spiculum scalloped along dorsal edge (Fig. 22); right paramere (Fig. 23).

Female ( $n = 5$ ): Length 2.40–2.65 mm, width 1.12–1.14 mm. *Head*: Width 0.52–0.57 mm, vertex 0.26–0.26 mm; frons more strongly swollen than in male. *Rostrum*: Length 0.78–0.79 mm, extending nearly to metacoxae (extending past metacoxae nearly to base of ovipositor in curled or more teneral specimens). *Antenna*: Segment I, length 0.21–0.22 mm; II, 0.85–0.86 mm; III, 0.36–0.40 mm; IV, 0.22–0.26 mm. *Pronotum*: Length 0.23–0.25 mm, basal width 0.79–0.81 mm.

Similar to male in color and pubescence, but differs by the more strongly swollen frons and slightly broader hemelytra.

Host.—Unknown.

Distribution.—Previously known only from Puerto Rico. Now newly recorded from the United States (Florida).

Discussion.—Although this species lacks the extended tylus that is characteristic of *P. carvalhoi* males, it shares all other char-

acters that define the genus, including the swollen frons in both sexes, the stout antennal segment I, the uniformly cylindrical antennal segment II, the black scalelike setae on the dorsum (including the cuneal patch), and the male genital capsule with a field of stout setae on the ventral surface.

Specimens examined.—PUERTO RICO: Holotype ♂, allotype ♀ (and 3 badly damaged paratypes), Mayaguez, Julio 1961, J. Maldonado C. (USNM); 2 ♂, 1 ♀, El Verde, June 1967, J. Maldonado C. (USNM); 2 ♂, Caribbean N. E., El Verde Field Sta., 8–14 May 1985, at UV light, 300 m el., C.U.I.C. 1985 Exp. E. R. Hoebeke, J. K. Liebherr, & S. W. Nichols (USNM; additional material in Cornell University collection); 3 ♂, 5 ♀, El Verde Field Station, 12 June 1990, A. G. Wheeler, Jr., taken at UV light (USNM). UNITED STATES: 3 ♂, 1 ♀, Florida, Monroe Co., Flemming Key [man-made key off north edge of Key West], 23 January 1979, 19 & 21–25 December 1979, 27 January 1980, John A. Acree & H. V. Weems, Jr., insect flight trap (FSCA, 1 ♂ USNM).

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